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Inventor(s): Wei WANG, et al.
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Title: CHEMOKINE AND RECEPTOR USES; COMPOSITIONS; METHODS

Enclosed:

1. Request for a one-month extension of time (1 page, in duplicate); 2. Response to Notice to File Missing Parts (2 pages in duplicate); 3. Signed Declaration and Power of Attorney (Two copies signed in counterpart, 5 pages each); 4. Copy of Notice to File Missing Parts - Filing Date Granted (2 pages); 5. Response to Notice to Comply with Sequence Listing Rules (2 pages) 6. One write-protected diskette (CRM); 7. Paper print-out of contents of diskette (16 pages) 8. Return Postcard.

SEQUENCE LISTING

<110> Oldham, Elizabeth K.
Soto, Hortensia
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Homey, Bernhard
Morales, Janine M.
Kellerman, Sirid-Aimee
McEvoy, Leslie M.
Bowman, Edward P.
Zlotnik, Albert



<120> CHEMOKINE AND RECEPTOR USES; COMPOSITIONS; METHODS

<130> DX0882XK

<140> US09/898,751

<141> 2001-07-02

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<151> 1999-12-23

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<151> 1999-05-27

<150> US60/113,858

<151> 1998-12-24

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<170> PatentIn version 3.1

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<220>

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<222> (1)..(1086)

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Asp Glu Glu Asp Ala Tyr Ser Ala Glu Pro Leu Pro Glu Leu Cys Tyr	
20 25 30	
aag gcc gat gtc cag gcc ttc agc cgg gcc ttc caa ccc agt gtc tcc	144
Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser	
35 40 45	
ctg acg ctg gct gcg ctg ggt ctg gcc ggc aat ggc ctg gtc ctg gcc	192
Leu Thr Leu Ala Ala Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala	
50 55 60	

acc cac ctg gca gcc cga cgc gca gcg cgc tcg ccc acc tct gcc cac	240
Thr His Leu Ala Ala Arg Arg Ala Ala Arg Ser Pro Thr Ser Ala His	
65 70 75 80	
ctg ctc cag ctg gcc ctg gcc gac ctc ttg ctg gcc ctg act ctg ccc	288
Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro	
85 90 95	
ttc gcg gca gca ggg gct ctt cag ggc tgg agt ctg gga agt gcc acc	336
Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Ser Leu Gly Ser Ala Thr	
100 105 110	
tgc cgc acc atc tct ggc ctc tac tcg gcc tcc ttc cac gcc ggc ttc	384
Cys Arg Thr Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe	
115 120 125	
ctc ttc ctg gcc tgt atc agc gcc gac cgc tac gtg gcc atc gcg cga	432
Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg	
130 135 140	
gcg ctc cca gcc ggg ccg cgg ccc tcc act ccc ggc cgc gca cac ttg	480
Ala Leu Pro Ala Gly Pro Arg Pro Ser Thr Pro Gly Arg Ala His Leu	
145 150 155 160	
gtc tcc gtc atc gtg tgg ctg ctg tca ctg ctc ctg gcg ctg cct gcg	528
Val Ser Val Ile Val Trp Leu Leu Ser Leu Leu Leu Ala Leu Pro Ala	
165 170 175	
ctg ctc ttc agc cag gat ggg cag cgg gaa ggc caa cga cgc tgt cgc	576
Leu Leu Phe Ser Gln Asp Gly Gln Arg Glu Gly Gln Arg Arg Cys Arg	
180 185 190	
ctc atc ttc ccc gag ggc ctc acg cag acg gtg aag ggg gcg agc gcc	624
Leu Ile Phe Pro Glu Gly Leu Thr Gln Thr Val Lys Gly Ala Ser Ala	
195 200 205	
gtg gcg cag gtg gcc ctg ggc ttc gcg ctg ccg ctg ggc gtc atg gta	672
Val Ala Gln Val Ala Leu Gly Phe Ala Leu Pro Leu Gly Val Met Val	
210 215 220	
gcc tgc tac gcg ctt ctg ggc cgc acg ctg ctg gcc gcc agg ggg ccc	720
Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro	
225 230 235 240	
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Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Ala Ala Phe	
245 250 255	
gtg gtg ctg cag ctg ccc tac agc ctc gcc ctg ctg ctg gat act gcc	816
Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala	
260 265 270	
gat cta ctg gct gcg cgc gag cgg agc tgc cct gcc agc aaa cgc aag	864
Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Pro Ala Ser Lys Arg Lys	
275 280 285	
gat gtc gca ctg ctg gtg acc agc ggc ttg gcc ctc gcc cgc tgt ggc	912
Asp Val Ala Leu Leu Val Thr Ser Gly Leu Ala Leu Ala Arg Cys Gly	
290 295 300	
ctc aat ccc gtt ctc tac gcc ttc ctg ggc ctg cgc ttc cgc cag gac	960

Leu	Asn	Pro	Val	Leu	Tyr	Ala	Phe	Leu	Gly	Leu	Arg	Phe	Arg	Gln	Asp	
305					310					315					320	
ctg	cgg	agg	ctg	cta	cgg	ggg	ggg	agc	tcg	ccc	tca	ggg	cct	caa	ccc	1008
Leu	Arg	Arg	Leu	Leu	Arg	Gly	Gly	Ser	Ser	Pro	Ser	Gly	Pro	Gln	Pro	
				325					330					335		
cgc	cgc	ggc	tgc	ccc	cgc	cgg	ccc	cgc	ctt	tct	tcc	tgc	tca	gct	ccc	1056
Arg	Arg	Gly	Cys	Pro	Arg	Arg	Pro	Arg	Leu	Ser	Ser	Cys	Ser	Ala	Pro	
			340					345					350			
acg	gag	acc	cac	agt	ctc	tcc	tgg	gac	aac	tag						1089
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			355				360									

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			20					25					30			
Lys	Ala	Asp	Val	Gln	Ala	Phe	Ser	Arg	Ala	Phe	Gln	Pro	Ser	Val	Ser	
		35					40					45				
Leu	Thr	Leu	Ala	Ala	Leu	Gly	Leu	Ala	Gly	Asn	Gly	Leu	Val	Leu	Ala	
	50					55					60					
Thr	His	Leu	Ala	Ala	Arg	Arg	Ala	Ala	Arg	Ser	Pro	Thr	Ser	Ala	His	
	65				70					75					80	
Leu	Leu	Gln	Leu	Ala	Leu	Ala	Asp	Leu	Leu	Leu	Ala	Leu	Thr	Leu	Pro	
				85				90						95		
Phe	Ala	Ala	Ala	Gly	Ala	Leu	Gln	Gly	Trp	Ser	Leu	Gly	Ser	Ala	Thr	
			100					105						110		
Cys	Arg	Thr	Ile	Ser	Gly	Leu	Tyr	Ser	Ala	Ser	Phe	His	Ala	Gly	Phe	
		115					120					125				
Leu	Phe	Leu	Ala	Cys	Ile	Ser	Ala	Asp	Arg	Tyr	Val	Ala	Ile	Ala	Arg	
	130					135					140					
Ala	Leu	Pro	Ala	Gly	Pro	Arg	Pro	Ser	Thr	Pro	Gly	Arg	Ala	His	Leu	
					150					155					160	

Val Ser Val Ile Val Trp Leu Leu Ser Leu Leu Leu Ala Leu Pro Ala
165 170 175

Leu Leu Phe Ser Gln Asp Gly Gln Arg Glu Gly Gln Arg Arg Cys Arg
180 185 190

Leu Ile Phe Pro Glu Gly Leu Thr Gln Thr Val Lys Gly Ala Ser Ala
195 200 205

Val Ala Gln Val Ala Leu Gly Phe Ala Leu Pro Leu Gly Val Met Val
210 215 220

Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro
225 230 235 240

Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Ala Ala Phe
245 250 255

Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala
260 265 270

Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Pro Ala Ser Lys Arg Lys
275 280 285

Asp Val Ala Leu Leu Val Thr Ser Gly Leu Ala Leu Ala Arg Cys Gly
290 295 300

Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Gln Asp
305 310 315 320

Leu Arg Arg Leu Leu Arg Gly Gly Ser Ser Pro Ser Gly Pro Gln Pro
325 330 335

Arg Arg Gly Cys Pro Arg Arg Pro Arg Leu Ser Ser Cys Ser Ala Pro
340 345 350

Thr Glu Thr His Ser Leu Ser Trp Asp Asn
355 360

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aag gct gat gtc cag gct ttc agt cgg gcc ttc caa ccc agt gtc tcc Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser 35 40 45	144
ctg atg gtg gct gta ctg ggt ctg gct ggc aat ggc cta gtc ttg gcc Leu Met Val Ala Val Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala 50 55 60	192
acc cat ctg gca gcc aga cga act acc cga tct ccc acc tcc gtt cac Thr His Leu Ala Ala Arg Arg Thr Thr Arg Ser Pro Thr Ser Val His 65 70 75 80	240
ctg ctc cag ttg gcc ctg gct gac ctt tta ttg gcc ctg act ttg cct Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro 85 90 95	288
ttt gct gca gca ggg gct ctt cag ggc tgg aat cta gga agt acc acc Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Asn Leu Gly Ser Thr Thr 100 105 110	336
tgc cgt gcc atc tca ggc ctc tac tcg gcc tct ttc cac gct ggc ttc Cys Arg Ala Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe 115 120 125	384
ctc ttc cta gcc tgt atc agc gcc gac cgc tat gtg gcc atc gca cga Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg 130 135 140	432
gct ctc cca gcc ggg cag cgg ccc tca acg cct agc cga gcg cac ttg Ala Leu Pro Ala Gly Gln Arg Pro Ser Thr Pro Ser Arg Ala His Leu 145 150 155 160	480
gtt tca gtc ttc gtg tgg ctg ttg gcg ctg ttt ctg gct cta cct gcg Val Ser Val Phe Val Trp Leu Leu Ala Leu Phe Leu Ala Leu Pro Ala 165 170 175	528
ctc ctt ttc agc cgg gac ggg cca cgt gaa ggc caa cga cgc tgt cgg Leu Leu Phe Ser Arg Asp Gly Pro Arg Glu Gly Gln Arg Arg Cys Arg 180 185 190	576
ctc att ttt ccc gaa agc ctc acg cag act gtg aaa ggg gca agc gca Leu Ile Phe Pro Glu Ser Leu Thr Gln Thr Val Lys Gly Ala Ser Ala 195 200 205	624
gtg gcg cag gtg gtc ctc ggc ttc gcg ctc cct ctg ggc gtc atg gca Val Ala Gln Val Val Leu Gly Phe Ala Leu Pro Leu Gly Val Met Ala 210 215 220	672

gcc tgt tat gcg ctc ctg ggc cgc acg ctt ctg gcc gcc agg ggg cca Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro 225 230 235 240	720
gag cgg cgg cgt gca ctg cgc gtc gtg gtg gct ttg gtg gtg gcc ttc Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Val Ala Phe 245 250 255	768
gtg gtg ctg cag ttg ccc tac agc ctt gcc ctg ctg ctg gat aca gcc Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala 260 265 270	816
gat cta ctg gca gcc cgc gag cgg agc tgc tcc tcc agc aag cgc aag Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Ser Ser Ser Lys Arg Lys 275 280 285	864
gat cta gct ttg ctg gtc acc ggc ggc ttg acc ctg gtc cgt tgc agc Asp Leu Ala Leu Leu Val Thr Gly Gly Leu Thr Leu Val Arg Cys Ser 290 295 300	912
ctc aat ccg gtg ctt tat gcc ttt ttg ggc ctg cgt ttc cgc cgg gac Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Arg Asp 305 310 315 320	960
ctg cgg agg ctg ctc cag ggc gga gga tgc agc ccg aag ccc aac cct Leu Arg Arg Leu Leu Gln Gly Gly Gly Cys Ser Pro Lys Pro Asn Pro 325 330 335	1008
cgt ggc cgc tgc ccc cgt cga ctc cgc ctt tct tcc tgc tct gct cct Arg Gly Arg Cys Pro Arg Arg Leu Arg Leu Ser Ser Cys Ser Ala Pro 340 345 350	1056
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Tyr Asp Glu Glu Ala Tyr Ser Val Gly Pro Leu Pro Glu Leu Cys Tyr 20 25 30
Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser 35 40 45
Leu Met Val Ala Val Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala 50 55 60
Thr His Leu Ala Ala Arg Arg Thr Thr Arg Ser Pro Thr Ser Val His

65

70

75

80

Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro
85 90 95

Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Asn Leu Gly Ser Thr Thr
100 105 110

Cys Arg Ala Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe
115 120 125

Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg
130 135 140

Ala Leu Pro Ala Gly Gln Arg Pro Ser Thr Pro Ser Arg Ala His Leu
145 150 155 160

Val Ser Val Phe Val Trp Leu Leu Ala Leu Phe Leu Ala Leu Pro Ala
165 170 175

Leu Leu Phe Ser Arg Asp Gly Pro Arg Glu Gly Gln Arg Arg Cys Arg
180 185 190

Leu Ile Phe Pro Glu Ser Leu Thr Gln Thr Val Lys Gly Ala Ser Ala
195 200 205

Val Ala Gln Val Val Leu Gly Phe Ala Leu Pro Leu Gly Val Met Ala
210 215 220

Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro
225 230 235 240

Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Val Ala Phe
245 250 255

Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala
260 265 270

Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Ser Ser Ser Lys Arg Lys
275 280 285

Asp Leu Ala Leu Leu Val Thr Gly Gly Leu Thr Leu Val Arg Cys Ser
290 295 300

Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Arg Asp
305 310 315 320

Leu Arg Arg Leu Leu Gln Gly Gly Gly Cys Ser Pro Lys Pro Asn Pro
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Thr Glu Thr His Ser Leu Ser Trp Asp Asn
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 Met

cag cag aga gga ctc gcc atc gtg gcc ttg gct gtc tgt gcg gcc cta 106
 Gln Gln Arg Gly Leu Ala Ile Val Ala Leu Ala Val Cys Ala Ala Leu
 -20 -15 -10

cat gcc tca gaa gcc ata ctt ccc att gcc tcc agc tgt tgc acg gag 154
 His Ala Ser Glu Ala Ile Leu Pro Ile Ala Ser Ser Cys Cys Thr Glu
 -5 -1 1 5 10

gtt tca cat cat att tcc aga agg ctc ctg gaa aga gtg aat atg tgt 202
 Val Ser His His Ile Ser Arg Arg Leu Leu Glu Arg Val Asn Met Cys
 15 20 25

cgc atc cag aga gct gat ggg gat tgt gac ttg gct gct gtc atc ctt 250
 Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile Leu
 30 35 40

cat gtc aag cgc aga aga atc tgt gtc agc ccg cac aac cat act gtt 298
 His Val Lys Arg Arg Arg Ile Cys Val Ser Pro His Asn His Thr Val
 45 50 55

aag cag tgg atg aaa gtg caa gct gcc aag aaa aat ggt aaa gga aat 346
 Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys Asn Gly Lys Gly Asn
 60 65 70 75

gtt tgc cac agg aag aaa cac cat ggc aag agg aac agt aac agg gca 394
 Val Cys His Arg Lys Lys His His Gly Lys Arg Asn Ser Asn Arg Ala
 80 85 90

cat cag ggg aaa cac gaa aca tac ggc cat aaa act cct tat 436
 His Gln Gly Lys His Glu Thr Tyr Gly His Lys Thr Pro Tyr
 95 100 105

tagagagtct acagataaat ctacagagac aattcctcaa gtggacttgg ccatgattgg 496

ttgtcctgca tactgatgaa actactgatg tcvgctggtc tgaaaggacc taccagaagc 556

taaatctcca agaatgccat ttccctatcc ctaatgatcc aatctccctt accctgacca 616

atcagtggcc caaattttcc agccccttgc ctcccagaac cccagcccag aactcttcag 676

agatttaaga atctctctct acctctcgac tcagcccat gtaatcatta aactc 731

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Glu Val Ser His His Ile Ser Arg Arg Leu Leu Glu Arg Val Asn Met
 15 20 25

Cys Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile
 30 35 40

Leu His Val Lys Arg Arg Arg Ile Cys Val Ser Pro His Asn His Thr
 45 50 55

Val Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys Asn Gly Lys Gly
 60 65 70

Asn Val Cys His Arg Lys Lys His His Gly Lys Arg Asn Ser Asn Arg

75

80

85

90

Ala His Gln Gly Lys His Glu Thr Tyr Gly His Lys Thr Pro Tyr
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atc tac tgg ggc tgc ttc tac ttt ttt cct tgg ctg cga atg tgg cgc 96
 Ile Tyr Trp Gly Cys Phe Tyr Phe Phe Pro Trp Leu Arg Met Trp Arg
 20 25 30

agg gag cgg agt ccg atg tct cca aca agc cag aga cta agt ctg gaa 144
 Arg Glu Arg Ser Pro Met Ser Pro Thr Ser Gln Arg Leu Ser Leu Glu
 35 40 45

gcc ccc agc ctc cca ctg aga agc tgg cat ccg tgg aac aag act aag 192
 Ala Pro Ser Leu Pro Leu Arg Ser Trp His Pro Trp Asn Lys Thr Lys
 50 55 60

cag aag caa gaa gcc ttg cct ctg ccc tcc agc act agc tgc tgt act 240
 Gln Lys Gln Glu Ala Leu Pro Leu Pro Ser Ser Thr Ser Cys Cys Thr
 65 70 75 80

cag ctc tat aga cag cca ctc cca agc agg ctg ctg agg agg att gtc 288
 Gln Leu Tyr Arg Gln Pro Leu Pro Ser Arg Leu Leu Arg Arg Ile Val
 85 90 95

cac atg gaa ctg cag gag gcc gat ggg gac tgt cac ctc cag gct gtc 336
 His Met Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu Gln Ala Val
 100 105 110

gtg ctt cac ctg gct cgg cgc agt gtc tgt gtt cat ccc cag aac cgc 384
 Val Leu His Leu Ala Arg Arg Ser Val Cys Val His Pro Gln Asn Arg
 115 120 125

agc ctg gct cgg tgg tta gaa cgc caa ggg aaa agg ctc caa ggg act 432
 Ser Leu Ala Arg Trp Leu Arg Gln Gly Lys Arg Leu Gln Gly Thr
 130 135 140

gta ccc agt tta aat ctg gta cta caa aag aaa atg tac tca aac ccc 480
 Val Pro Ser Leu Asn Leu Val Leu Gln Lys Lys Met Tyr Ser Asn Pro
 145 150 155 160

caa cag caa aac taataaagca acattagacg acaaaaaaaaa aaaaaaaaaa 532
 Gln Gln Gln Asn

aaaaaaaaa a

543

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<212> PRT
<213> Homo sapiens

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Ile Tyr Trp Gly Cys Phe Tyr Phe Phe Pro Trp Leu Arg Met Trp Arg
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Arg Glu Arg Ser Pro Met Ser Pro Thr Ser Gln Arg Leu Ser Leu Glu
35 40 45

Ala Pro Ser Leu Pro Leu Arg Ser Trp His Pro Trp Asn Lys Thr Lys
50 55 60

Gln Lys Gln Glu Ala Leu Pro Leu Pro Ser Ser Thr Ser Cys Cys Thr
65 70 75 80

Gln Leu Tyr Arg Gln Pro Leu Pro Ser Arg Leu Leu Arg Arg Ile Val
85 90 95

His Met Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu Gln Ala Val
100 105 110

Val Leu His Leu Ala Arg Arg Ser Val Cys Val His Pro Gln Asn Arg
115 120 125

Ser Leu Ala Arg Trp Leu Glu Arg Gln Gly Lys Arg Leu Gln Gly Thr
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Val Pro Ser Leu Asn Leu Val Leu Gln Lys Lys Met Tyr Ser Asn Pro
145 150 155 160

Gln Gln Gln Asn

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ttt caa acc tca gaa gcc ata ctt ccc atg gcc tcc agc tgt tgc act 96
 Phe Gln Thr Ser Glu Ala Ile Leu Pro Met Ala Ser Ser Cys Cys Thr
 -5 -1 1 5 10

gag gtg tct cat cat gtt tcc gga aga ctt ctg gaa aga gtg agt tca 144
 Glu Val Ser His His Val Ser Gly Arg Leu Leu Glu Arg Val Ser Ser
 15 20 25

tgc agc atc cag aga gct gac ggg gac tgc gac ctg gct gct gtc atc 192
 Cys Ser Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile
 30 35 40

ctt cat gtt aaa cgt aga aga atc tgc atc agc ccg cac aat cgt act 240
 Leu His Val Lys Arg Arg Arg Ile Cys Ile Ser Pro His Asn Arg Thr
 45 50 55

ttg aag cag tgg atg aga gcc tca gag gta aag aag aat ggc aga gaa 288
 Leu Lys Gln Trp Met Arg Ala Ser Glu Val Lys Lys Asn Gly Arg Glu
 60 65 70

aac gtc tgt tct ggg aaa aaa caa ccc agc agg aag gac aga aaa ggg 336
 Asn Val Cys Ser Gly Lys Lys Gln Pro Ser Arg Lys Asp Arg Lys Gly
 75 80 85 90

cac act acg aga aag cac aga aca cgt gga aca cac agg cac gaa gcc 384
 His Thr Thr Arg Lys His Arg Thr Arg Gly Thr His Arg His Glu Ala
 95 100 105

tct cgt tag 393
 Ser Arg

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 -20 -15 -10

Phe Gln Thr Ser Glu Ala Ile Leu Pro Met Ala Ser Ser Cys Cys Thr
 -5 -1 1 5 10
 Glu Val Ser His His Val Ser Gly Arg Leu Leu Glu Arg Val Ser Ser
 15 20 25
 Cys Ser Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile
 30 35 40
 Leu His Val Lys Arg Arg Arg Ile Cys Ile Ser Pro His Asn Arg Thr
 45 50 55
 Leu Lys Gln Trp Met Arg Ala Ser Glu Val Lys Lys Asn Gly Arg Glu
 60 65 70
 Asn Val Cys Ser Gly Lys Lys Gln Pro Ser Arg Lys Asp Arg Lys Gly
 75 80 85 90
 His Thr Thr Arg Lys His Arg Thr Arg Gly Thr His Arg His Glu Ala
 95 100 105

Ser Arg

<210> 11
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 Lys Val Ile Gln Val Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu
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 Gln Ala Phe Val Leu His Leu Ala Gln Arg Ser Ile Cys Ile His Pro
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 Gln Asn Pro Ser Leu Ser Gln Trp Phe Glu His Gln Glu Arg Lys Leu
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Pro Gln Asn Arg Ser Leu Ala Arg Trp Leu Glu Arg Gln Gly Lys Arg
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